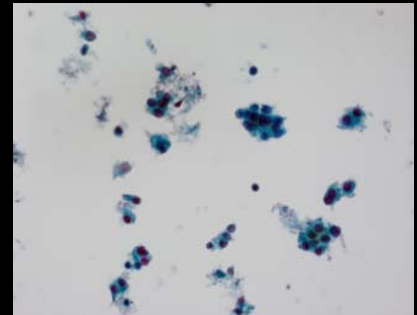
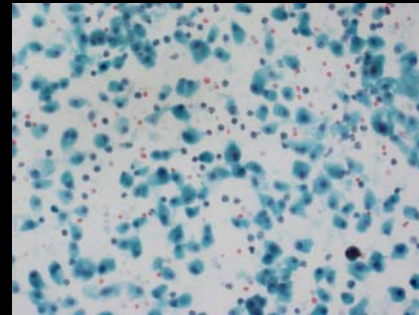
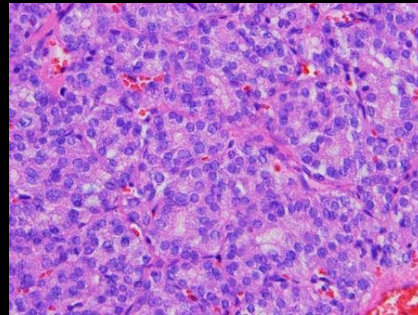
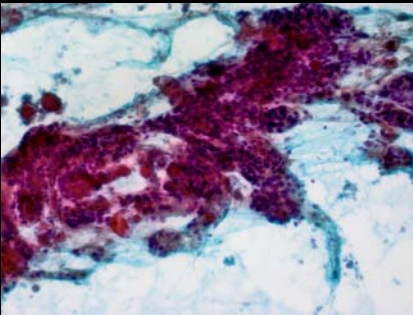


# NCI Thyroid FNA Conference

## VI. Post Thyroid FNA Testing & Treatment Strategies: Follow-up of “Indeterminate” and/or “Suspicious” FNA results

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Jacki Abrams M.D.



## NCI Thyroid FNA Conference

### VI. Post Thyroid FNA Testing & Treatment Strategies: Follow-up of “Indeterminate” and/or “Suspicious” FNA results

REVIEW

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#### Variations in definition of “Indeterminate”

##### Category:

- for Neoplasm (vs. Cellular Hyperplastic or Adenomatoid Nodule)
- for Malignancy (Follicular Adenoma vs. Follicular Carcinoma)
- Suspicious (for Papillary Carcinoma or other malignancy)
- Atypia (NOS)

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#### REVIEW

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- Has led to variability in results of follow-up of large series with respect to % malignancy
- Overall ~15% “Indeterminate” are malignant (up to 30% in some series), 85% benign (adenoma/hyperplasia)
- Low PPV, low specificity causes controversy in appropriate therapy
- Implications: UNNECESSARY SURGERY vs. risk of missing a (most often indolent) cancer

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#### REVIEW

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- Review of 244 FNA's (excluding unsatisfactory category), interpreted by different pathologists at various institutions, with surgical follow-up at SLEH, Houston, TX
- Indeterminate + Suspicious DX accounted for HALF of all surgeries
- 81 true indeterminate, 43 suspicious for/ suggestive of malignancy
- For suspicious: 29 malignant + 1 FTUMP = 70%
- For indeterminate: 11 malignant (FVPC/FC) + 4 FTUMP = 19%
- TERMINOLOGY MUST BE CLARIFIED/STANDARDIZED (Committee IV)

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### **VI. Post Thyroid FNA Testing & Treatment Strategies: Follow-up of “Indeterminate” and/or “Suspicious” FNA results**

**REVIEW**

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#### **SUGGESTED STRATEGIES HAVE INCLUDED:**

**(To improve diagnostic accuracy or effect ultimate treatment decision)**

- **Repeat FNA**
- **Utilization of liquid-based cytology/IHC**
- **Repeat US or looking at specific features  
(size, echogenicity, borders, Ca++, vascularization)**
- **Iodine radionuclide scan**

**vs.**

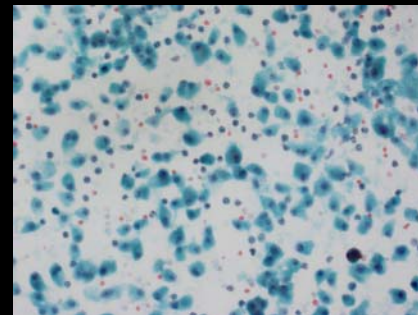
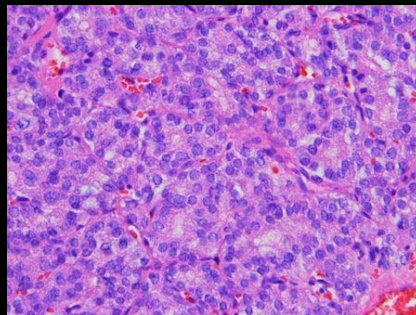
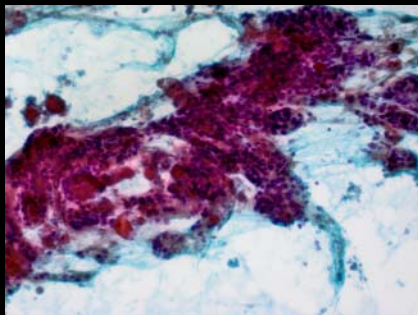
- **SURGICAL RESECTION**

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- Is there a meaningful **follow-up difference** between the categories “**cellular lesion; cannot R/O follicular neoplasm**” & “**follicular neoplasm**”
- 2: NO.

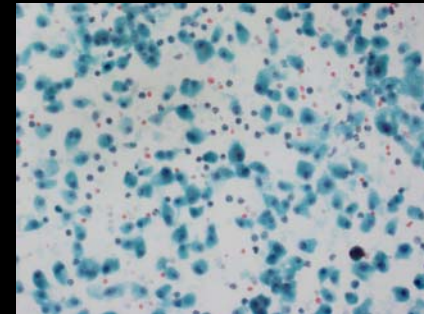
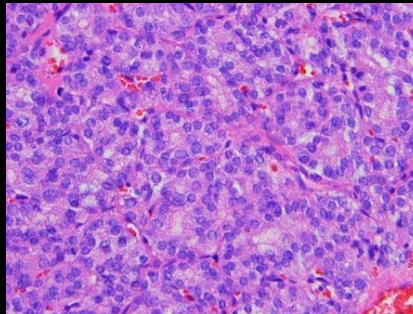
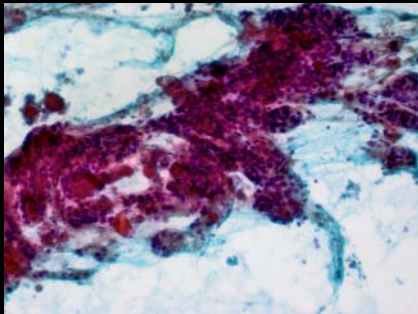


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## VI. Post Thyroid FNA Testing & Treatment Strategies: Follow-up of “Indeterminate” and/or “Suspicious” FNA results CONTROVERSIES 1

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- What is the optimal follow up for “cellular lesion; cannot rule out follicular neoplasm”? Should the patient be immediately referred to surgery or does I 123 scanning have a role?
- 2: Scan would be helpful if “hot”, although not common, but would save surgery.

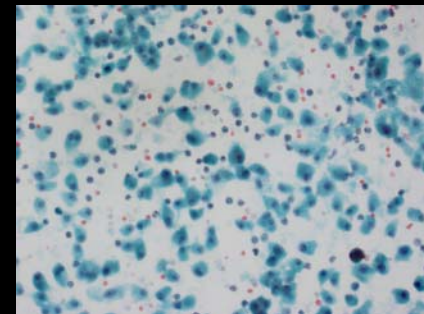
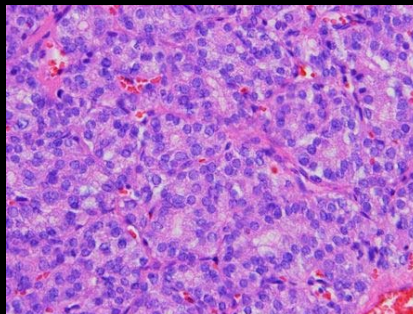
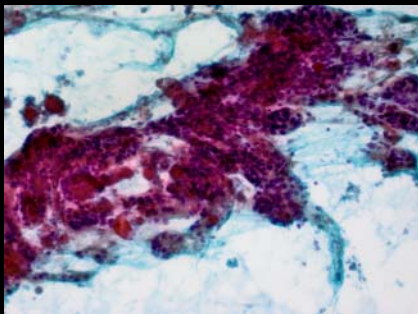


# NCI Thyroid FNA Conference

## VI. Post Thyroid FNA Testing & Treatment Strategies: Follow-up of “Indeterminate” and/or “Suspicious” FNA results

### CONTROVERSIES 1

- Should all patients with an FNA diagnosis of “follicular neoplasm” be referred for surgery?
- 1: Patient should be informed of the risk/benefit ratio.
  - Size >2cm, recent growth, + family hx, male = recommend surgery.
  - Poor surgical candidate, clinically *benign feeling*  $\leq 1$ cm = consider observation.
- 1: Yes, unless surgery is contraindicated due to other factors. Although most will be benign, would hate to miss cancer.



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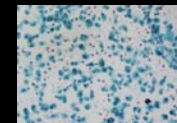
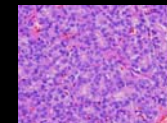
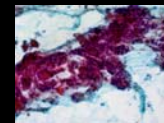
## VI. Post Thyroid FNA Testing & Treatment Strategies: Follow-up of “Indeterminate” and/or “Suspicious” FNA results CONTROVERSIES 1

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From Committee IV, Round 1 Forum:

Re: Diagnostic Terminology: How should the follicular patterned non- papillary lesions be diagnosed (follicular lesion vs. neoplasm vs. micro-follicular lesion vs. macro-follicular lesion)?

- I think and believe that a report of follicular neoplasm or Hurthle cell neoplasm should contain a note stating the 20% risk and also including that most of the studies show that the malignant lesions tend to be 3.0 cm or larger in size. This is basically stating the fact and keeping the terminology simple and streamlined. These stats have been agreed upon by multiple studies. Naturally if there is a diagnosis of Hurthle cell neoplasm and the lesion is greater than 3.0 cm in an older man than the risk of malignancy increases. However, I leave this up to clinicians to decide i.e. lobectomy vs. total thyroidectomy.



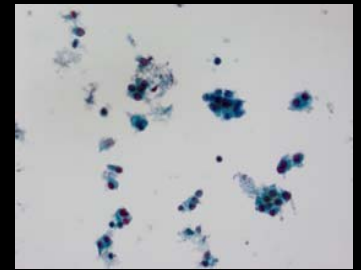
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### VI. Post Thyroid FNA Testing & Treatment Strategies: Follow-up of “Indeterminate” and/or “Suspicious” FNA results

#### CONTROVERSIES 1

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- Should all patients with a DX of “suspicious for malignancy” be referred for surgery? If not, what other testing should be done?
  
- 2: Yes.
  - (Both commented on need for specific clarification of “suspicious”.)

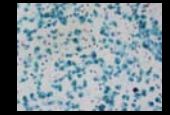
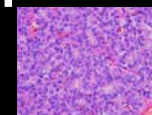
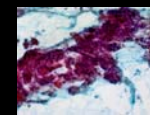


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### CONTROVERSIES 2

- Should all patients with FNA diagnosis of “follicular neoplasm” be referred for surgery?
- 1: Judgment call by clinician, considering surgical candidacy; most opt for lobectomy, despite PPV of 10-15% for malignancy
- 1: Term should be well-defined and reserved for fairly solid follicular proliferations with microfollicular pattern; statistically speaking, FC is uncommon and even less common in lesions < 2cm; would support making a comment to that effect and suggesting US correlation; otherwise we will continue to see thyroids removed for very small benign lesions (now being increasingly detected by US), which may be compounded by being over-called by pathologists to who think the presence of follicular cells=follicular lesion



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From Round 2 Forum, Committee IV Diagnostic Terminology:

- 1: Page 69 of the document states, regarding management of follicular neoplasms, “if the clinical setting is not worrisome, the recommendation should be surveillance, with repeat FNA”. Doesn’t agree; states it is “well accepted in the medical community that a diagnosis of follicular neoplasm warrants lobectomy.....”

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- DeMay, Am J Clin Pathol 2000: University of Chicago, 1% incidence of Follicular Carcinoma, over a 5 yr. period in 693 thyroid specimens
- 2004-2005, 392 consecutive thyroid surgeries over an 18 month period at SLEH, Houston, TX:
  - 10 cases (2.6%) Questionably Malignant and Malignant Follicular Neoplasms
  - 3 Follicular Carcinomas (0.8 %), 7 FTUMP (1.7%)
- JAMA May 2006 : In 2002, of 24,000 new cases of thyroid cancer, 9% were Follicular Carcinoma

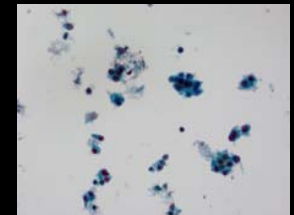
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### VI. Post Thyroid FNA Testing & Treatment Strategies: Follow-up of “Indeterminate” and/or “Suspicious” FNA results CONTROVERSIES 2

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Should all patients with a diagnosis of “suspicious for malignancy” be referred for surgery? If not, what other testing should be done?

- 1: Yes, if applied specifically to papillary or medullary carcinoma; controversy is whether they should have lobectomy or total thyroid. FS may be helpful to confirm a malignant DX.



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#### Conclusions:

- 1) In cases cytologically designated as indeterminate or suspicious for follicular neoplasm, the referring clinician should consider an iodine<sup>123</sup> scan, especially if serum TSH level is low or below normal. If the scan is hot, clinical follow up with repeat FNA in 3-6 months is recommended. If the scan is “cold,” the patient might be referred for surgery. In patients who are suboptimal operative candidates, re-examination of the nodule by ultrasound for irregularity of nodule border, increase in nodule size, abnormalities of vascularization and the presence of calcifications can be performed to increase the diagnostic accuracy of the “indeterminate” category.

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#### Conclusions:

- Additionally, as suggested by Dr. Francis Greenspan, factors that would favor surgery would be size  $>2\text{cm}$ , recent growth, positive family history, male sex. Factors that might suggest watchful waiting include poor surgical risk and/or a small ( $\leq 1\text{cm}$ ) clinically benign feeling nodule.

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#### Conclusions:

- 2) Needle aspirates diagnosed as “cellular lesion cannot rule out follicular neoplasm” should be approached in a manner similar to FNA’s with a diagnosis of “follicular neoplasm” or “indeterminate”.

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## Conclusions:

- 3) FNA's diagnosed as “suspicious for malignancy” should in most cases be referred to a surgeon.

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#### Additional Points for Discussion:

- In all cases of INDEFINITE CYTOLOGIC DIAGNOSES, including “Indeterminate or Suspicious or Inconclusive or Cannot R/O...neoplasm-malignancy or Follicular Neoplasm-Lesion/Cellular Follicular Lesion-Nodule or Atypical...etc.”, assuming the FNA is adequate for interpretation, how about a **SECOND OPINION BY A PATHOLOGIST PROFICIENT IN THYROID FNA INTERPRETATION?**
- How will repeat FNA (assuming the first is satisfactory for interpretation) help in the true “Indeterminate” follicular patterned (no papillary nuclear features) lesions?

